<div align="center">REMARKS</div>

Claims 1-24 are currently pending in the subject application and are presently under consideration. Claims 1, 5-7, 9, 15, 17-19, and 21 have been amended as shown on pages 3-7 of the Reply. Claims 20 and 24 has been cancelled. In addition, the specification has been amended as indicated on page 2.

Applicant's representative thanks Examiner Wu for the courtesies extended during the telephonic interview conducted on November 27, 2007. During the interview, the participants agreed upon an amendment to independent claim 1 to overcome the rejections under 35 U.S.C. §101. The Examiner also indicated that the amendments to claim 18 would most likely overcome the rejection of that claim under 35 U.S.C. §112. With regard to the claim rejections under 35 U.S.C. §102 and 35 U.S.C. §103, the Examiner offered the opinion that the proposed amendments most likely overcome the cited references, and indicated that he will perform a new art search upon receipt of the formal reply. The Examiner also made a number of other helpful suggestions, which have been incorporated into the present claim set found herein.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I.   Rejection of Claims 1-23 Under 35 U.S.C. §101

Claims 1-23 stands rejected under 35 U.S.C. §101 because the Office Action contends that the claimed invention is directed to non-statutory subject matter. Independent claim 1 has been amended to address the Examiner's concerns with regard to this rejection. It is therefore requested that this rejection be withdrawn.

II.   Rejection of Claim 18 Under 35 U.S.C §112

Claim 18 stands rejected under 35 U.S.C §112, first paragraph, as failing to comply with the written description requirement. Claim 18 has been amended to conform more closely with the language found in the written specification describing the disclosed feature (see page 11, lines 23-26). It is therefore requested that this rejection be withdrawn.

III.   Rejection of Claims 1, 2, 10, 15 and 24 Under 35 U.S.C. §102(e)

Claims 1, 2, 10, 15 and 24 stand rejected under 35 U.S.C. §102(e) as being anticipated by Parry (US Publication (2002/0032805). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Parry does not teach or suggest each and every feature set forth in the subject claims.

> For a prior art reference to anticipate, 35 U.S.C. §102 requires that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (*quoting Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)).

The subject claims relate to a driver management system that facilitates seamless interactions between a highly threaded software environment and a less threaded driver or other type of software module. The driver management system can include a driver framework component (DFC) that utilizes objects that can act as adapters between a driver and the highly threaded system. These adapter objects can employ locks to synchronize the interactions between the driver and the system. In order to flexibly adapt to the data structure of a particular driver, the DFC can allow the driver to select a particular hierarchical locking model that determines the object level at which locks will be applied during synchronization. Possible locking levels can include at least the driver level, the device level, or the queue level. Alternatively, the DFC can allow the driver to select a non-synchronization model, which places the burden of synchronization entirely on the driver. In particular, amended independent claim 1 recites, *the adapter objects synchronize interactions between the driver and the multi-threaded environment according to a hierarchical locking model **selected by the driver at configuration time**, the hierarchical locking model determines a primary synchronization object level at which locks are applied during synchronization, the available synchronization object levels include at least one of a driver level, a device level, or a queue level.*

As conceded in the Office Action, Parry does not teach a *hierarchical locking model*. As such, Parry fails to anticipate applicant's invention as recited in amended independent claim 1 (and claims 2, 10, 15 and 24, which depend there from). It is therefore respectfully requested that this rejection be withdrawn.

IV.   Rejection of Claims 3, 13, 14, 16, 18, 19 and 22 Under 35 U.S.C. §103(a)

Claims 3, 13, 14, 16, 18, 19 and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Parry as applied to claims 1, 2, 10, 15 and 24 above, in view of McCauley III, *et al.* (US Patent 5,999,986). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Neither Parry nor McCauley III, *et al.*, individually or in combination, teach or suggest each and every aspect of the subject claims.

> A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007) citing Graham v. John Deere Co. of Kansas City, 383 U. S. 1, 36 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "'guard against slipping into the use of hindsight'" (*quoting Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964))).

In addition to the features discussed *supra*, the subject claims teach that a driver can specify an optional context memory allocation that can be associated with an adapter object. This context memory can be used by the driver to store, or point to, its data structure. Storing the driver's data structure on this allocated context memory can facilitate conforming the data structure to the DFC's object hierarchy, so that the aforementioned hierarchical locking model can be used to manage system interaction with the driver's data structure. In particular, amended claim 19 recites, *at least one adapter object **allows the driver to specify an optional context memory allocation** to be associated with the adapter object, the driver stores its primary data structure in the context memory to facilitate interaction with the data structure according to the DFC's hierarchical locking model.*

The Examiner contends that McCauley III, *et al.* teaches the specification of context memory by a driver, citing in particular the allocation of a buffer in which to return the results of a method invocation from a server to the client that invoked the method. However, the cited reference teaches only that the aforementioned buffer is used to convey data related to a method invocation between a client and a server. This in no way suggests the allocation of memory to be used by a driver for *storing the driver's data structure*. Nor does McCauley III, *et al.* disclose associating such allocated context memory with an *adapter object* that facilitates synchronization

between a highly threaded system and a less threaded driver. Moreover, the cited reference does not teach that the storage of a driver's data structure in context memory facilitates interaction with the data structure according to a hierarchical locking model. In view of these many disparities, it is readily apparent that the context memory disclosed by the subject claims is functionally and materially distinct from the allocated buffer taught by McCauley III, *et al.*

Parry likewise fails to disclose the context memory features disclosed in amended claim 19. Parry relates to a method for simplifying the design of hardware drivers for streaming devices through the use of a stream class driver, but nowhere discloses that a driver can specify the allocation of context memory having the features described above.

Moreover, claims 3, 13, 14, 16, 18, 19 and 22 depend from amended independent claim 1. As discussed *supra*, Parry is silent regarding the hierarchical locking model disclosed in that independent claim. McCauley III, *et al.* also fails to disclose this feature of the subject claims, as conceded in the Office Action.

In view of at least the foregoing, it is respectfully submitted that Parry and McCaulley III, *et al.*, individually or in combination, do not teach or suggest all features disclosed amended independent claim 1 (and claims 3, 13, 14, 16, 18, 19, and 22, which depend there from), and therefore fail to make obvious applicant's claimed subject matter. Consequently, this rejection should be withdrawn.

V.   Rejection of Claims 4-9, 11, 12, 17 and 23 Under 35 U.S.C. §103(a)

Claims 4-9, 11, 12, 17 and 23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Parry and McCauley III, *et al.* as applied to claims 3, 13, 14, 16, 18, 19 and 22 above, in view of Bennett (US Patent 5,734,909). However, as conceded in the Office Action, neither Parry, McCauley III, *et al.*, nor Bennett teach the hierarchical locking model disclosed in amended independent claim 1. It is therefore respectfully requested that this rejection be withdrawn with respect to claims 4-9, 11, 12, 17, and 23, which depend from that independent claim.

VI.   Rejection of Claims 20 and 21 Under 35 U.S.C. §103(a)

Claims 20 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Parry, McCauley III and Bennett as applied to claims 4-9, 11, 12, 17 and 23 above, in view of

Shoens, *et al.* (US Patent 4,965,719). Claims 20 and 21 have been respectively cancelled and amended, and the majority of the features disclosed therein have been incorporated into amended independent claim 1, along with additional language clarifying the features of the hierarchical locking model. As discussed *supra*, and as conceded in the Office Action, neither Parry, McCauley III, *et al.*, nor Bennett teach or suggest the aforementioned hierarchical locking model. The Examiner cites Shoens, *et al.* to make up the deficiency of those references with respect to a hierarchical locking model. Shoens, *et al.* relates to a method for controlling multiple user access to data resources through the use of Resource Lock Managers. The Examiner notes that the Resource Lock Manager taught by the cited reference employs a hierarchical locking scheme when granting locks to a processor requesting access to a data resource. However, amended independent claim 1 recites, *the adapter objects synchronize interactions between the driver and the multi-threaded environment **according to a hierarchical locking model selected by the driver** at configuration time, the hierarchical locking model **determines a primary synchronization object level at which locks are applied during synchronization**, the available synchronization object levels include at least one of a driver level, a device level, or a queue level.* Shoens, *et al.* does not teach that a hierarchical locking model can be *selected by a driver* during configuration, wherein the selection *determines the primary synchronization object level* at which locks are applied during synchronization. Rather, the hierarchical locking scheme taught by the cited reference merely discloses that the elements of a database being accessed (i.e. the database, page, tuple, block, record, etc.) can be arranged into a logical hierarchy, and that a lock can be acquired by a processor for any of the logical database elements when the processor attempts to access that particular element. Hence, the level for which a lock is acquired is determined by the particular database element being accessed by a transaction. However, Shoens, *et al.* does not disclose that *a driver can select a primary level of synchronization* by selecting a particular hierarchical locking model, as taught by the subject claims.

In view of at least the foregoing, it is respectfully submitted that none of the cited art references teach or suggest each and every feature disclosed in amended independent claim 1 (and all claims depending there from), and as such fail to make obvious applicant's claimed subject matter. It is therefore requested that this rejection be withdrawn.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [MSFTP493US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant undersigned representative at the telephone number below.

Respectfully submitted,

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